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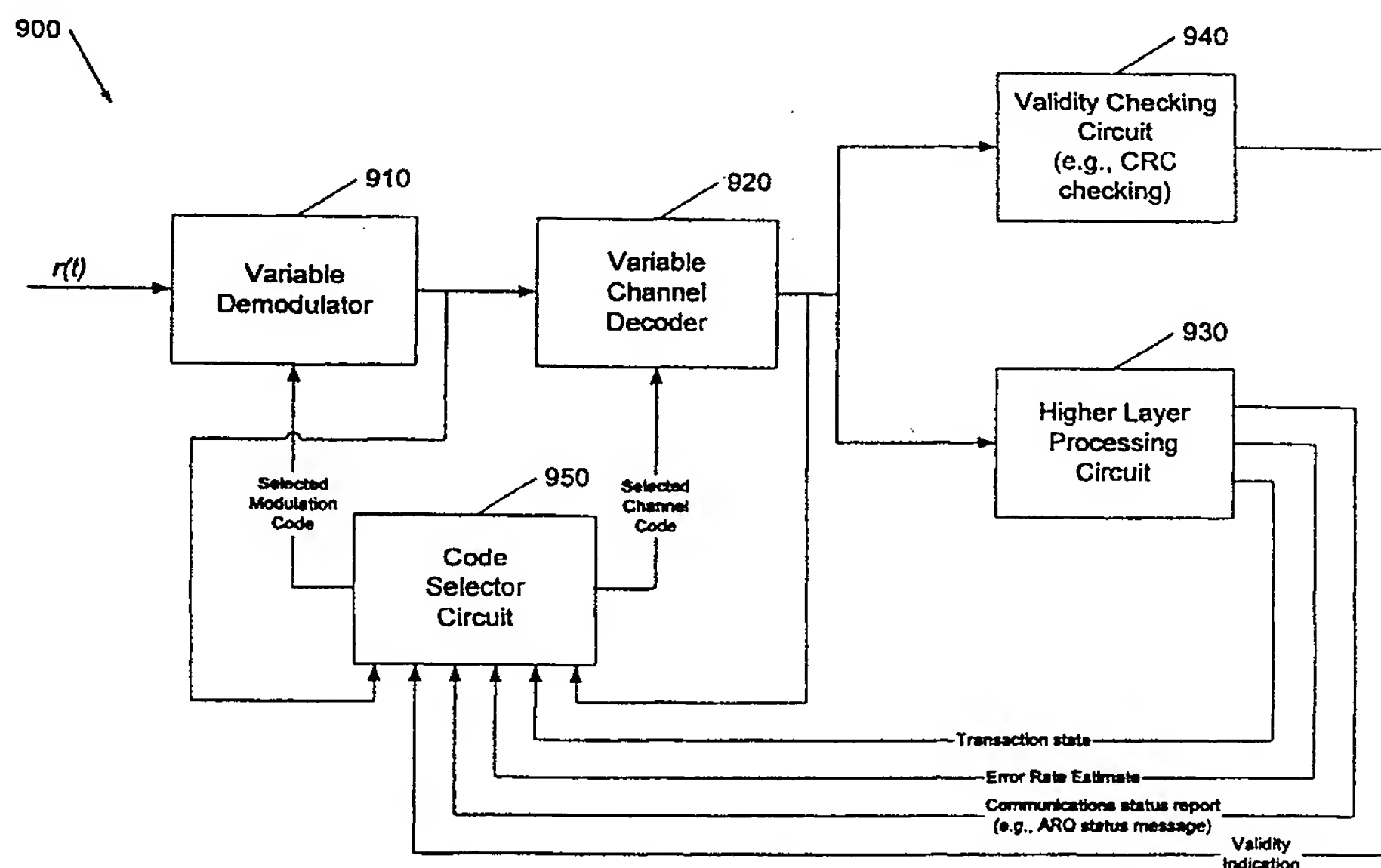
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(21) International Application Number: PCT/US99/28671 (22) International Filing Date: 3 December 1999 (03.12.99) (30) Priority Data: 60/111,876 11 December 1998 (11.12.98) US (71) Applicant: ERICSSON, INC. [US/US]; 7001 Development Drive, P.O. Box 13969, Research Triangle Park, CA 27709 (US). (72) Inventors: RAITH, Alex, Krister; Park Ridge Road 805-A5, Durham, NC 27713 (US). MOSTAFA, Ayman; 101 Kronos Lane, Cary, NC 27513 (US). (74) Agents: MEEKS, Robert, M. et al.; Myers, Bigel, Sibley & Sajovec, P.A., P.O. Box 37428, Raleigh, NC 27627 (US).			(81) Designated States: AE, AL, AM, AT, AT (Utility model), AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, CZ (Utility model), DE, DE (Utility model), DK, DK (Utility model), EE, EE (Utility model), ES, FI, FI (Utility model), GB, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (Utility model), SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> (88) Date of publication of the international search report: 8 September 2000 (08.09.00)

(54) Title: METHODS AND APPARATUS FOR DECODING VARIABLY-CODED SIGNALS BASED ON PRIOR COMMUNICATION

(57) Abstract

A signal representing variably coded information, *i.e.*, information that is coded according to a code selected from a set of codes, is received at a first station. The received signal is decoding according to respective codes of the set of codes to generate respective likelihood metrics associated with respective codes of the set of codes. A code is selected from the set of codes based on the respective likelihood metrics, wherein the selection of the code from the set of codes is biased based on a prior communication between the first station and a second station that transmitted the signal. The received signal is the decoded according to the selected code to generate an estimate of the information. According to another

embodiment, a signal representing a first variably code field and a second field that indicates the code applied to the first field, is received and processed to generate an estimate of the second field. Based on a confidence in the generated estimate of the second field, the receiving station either identifies the code applied to the first field based solely on the generated estimate of the second field, or identifies the code applied to the first field based on the generated estimate of the second field and respective likelihood metrics associated with decoding the received signal according to respective codes of the set of codes. In still another embodiment, an extent to which to partially decode a received variably coded signal to identify the code applied to the signal is determined based on a prior communication between the receiving station and a station that transmitted the signal.



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INTERNATIONAL SEARCH REPORT

Inte. onal Application No

PCT/US 99/28671

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H04L1/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 671 255 A (STEWART KENNETH A ET AL) 23 September 1997 (1997-09-23) column 5, line 52 - line 64 column 6, line 10 -column 7, line 30 ---	1-11, 31-36, 51-54
A	US 5 453 997 A (RONEY IV EDWARD M) 26 September 1995 (1995-09-26) abstract column 5, line 12 - line 20 ---	1-11, 31-36, 51-54
A	US 5 729 557 A (PETRANOVICH JAMES E ET AL) 17 March 1998 (1998-03-17) column 4, line 62 -column 5, line 22 --- -/--	12-20, 37-44, 55-62

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☒ Patent family members are listed in annex.

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International Application No

PCT/US 99/28671

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 757 813 A (RAITH ALEX KRISTER) 26 May 1998 (1998-05-26) cited in the application abstract ---	12-20, 37-44, 55-62
A	US 5 230 003 A (DENT PAUL W ET AL) 20 July 1993 (1993-07-20) cited in the application abstract ---	1-65
P,X	EP 0 924 890 A (WHITAKER CORP) 23 June 1999 (1999-06-23) column 11, line 7 - line 25 -----	12, 37, 55

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 99/28671

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5671255 A	23-09-1997	BR 9702322 A CA 2220965 A CN 1185880 A EP 0830770 A JP 11506597 T WO 9737471 A	09-03-1999 09-10-1997 24-06-1998 25-03-1998 08-06-1999 09-10-1997
US 5453997 A	26-09-1995	CA 2116736 A	06-09-1994
US 5729557 A	17-03-1998	AU 7368096 A CN 1197558 A EP 0852853 A WO 9711535 A	09-04-1997 28-10-1998 15-07-1998 27-03-1997
US 5757813 A	26-05-1998	AU 7452296 A WO 9715131 A	07-05-1997 24-04-1997
US 5230003 A	20-07-1993	CA 2060862 A GB 2253123 A, B HK 1007843 A	09-08-1992 26-08-1992 23-04-1999
EP 0924890 A	23-06-1999	US 6009553 A JP 11252054 A	28-12-1999 17-09-1999